TEMKINA, Berta Yakovlevna; MEL'NIKOVA, Marina Mikhaylovna;
    MIKHAYLOV, Nikolay Ivanovich; ZHUKOVA, V.I., red.

    [Production and use of electroplates from rare metals and
    their alloys] Poluchenie i primenenie gal'vanicheskikh
    pokrytii redkimi metallami i ikh splavami. Leningrad, 1964.
    27 p.
                                        (MIRA 18:3)

MOLOTOVA, L.V.; IVANOVA, T.G.; TEMKINA, E.A.

Seismic method of prospecting in the crystalline basement of the
Volga-Ural region. Geofiz.razved. no.7:3-19 '62.   (MIRA 15:7)
        (Volga-Ural region—Seismic prospecting)

KARTAVCHENKO, P.K., kand.sel'skokhoz.nauk; MUNTYAN, V.M., spetsred.;
    TEMKINA, E.S., vedushchiy red.

[Grape and wine industry in the people's democracies] Vino-
gradno-vinodel'cheskaia promyshlennost' v stranakh narodnoi
demokratii. Moskva, GOSINTI, 1958. 17 p.   (MIRA 13:6)
    (Viticulture)   (Wine and wine making)

BIRKGAN, Yuliy Benediktovich; FOGEL', V.O., spetsred.; TEMKINA, E.S., vedushchiy red.

[High-temperature heat engineering in the oils and fats industry abroad] Vysokotemperaturnoe teplosnabzhenie v zhirovoi promyshlennosti za rubezhom. Moskva, GOSINTI, 1959. 47 p.
(MIRA 13:6)

(Oil industries)   (Heat engineering)

HOUBRATNIKOVA, L... ... , R. .; ...

...-threshold audiometry in the topical diagnosis of cochlear damage. Cesk. otolaryng. 14 no.3:129-131 Je '65.

1. Klinika nemoci usnich, nosnich a krcnich 2. Moskevskeho lekarskeho ustavu N.I. Pirogova.

TROSHINA, I. Yu.

"Extraction of a Foreign Body from the Ear," Fel'dsher i Akusher., No. 9, 1949.

TEMKINA, I. Ya., Candidate Med Sci (diss) -- "The pathogenesis, clinical aspects, and prophylaxis of complications following punction of the maxillary sinus". Moscow, 1959. 15 pp (Acad Med Sci USSR), 250 copies (KL, No 24, 1959, 152)

TEMKINA, Izabella Yakovlevna; KORCHAGIN, A.V., red.; BASHMAKOV,
G.M., tekhn. red.

[Pathogenesis, clinical aspects and prevention of complica-
tions in the puncture of maxillary sinus] Patogenez, klinika
i profilaktika oslozhnenii pri punktsii gaimorovoi pazukhi.
Moskva, Medgiz, 1963. 116 p.   (MIRA 16:7)
          (MAXILLARY SINUS—PUNCTURE)

TEMKINA, R.Z., kandidat khimicheskikh nauk.

Urea-melamine-formaldehyde resins for gluing veneer.   Der. i lesokhim.prom.
2 no.12:20-22 D '53.
(MLRA 6:11)

1. TSentral'nyy nauchno-issledovatel'skiy institut fanery i mebeli.
(Adhesives)

TEMKINA, R.Z., kandidat khimicheskikh nauk; YACHINA, T.V., inzhener.

Synthetic glue for use in the production of food packaging material.
Der.i lesokhim.prom. 3 no.3:18-21 Mr '54.   (MLRA 7:3)

1. TsNIIFM.   (Adhesives)

TEMKINA, R. Z.

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
Synthetic Resins and Plastics

Preparation of melamine-formaldehyde adhesive resins. R. Z. Temkina. Zhur. Priklad. Khim. 27, 97-104(1954).—The prepn. of melamine-formaldehyde adhesives is discussed in detail. It is shown that the most satisfactory conditions for their prepn. are: melamine/CH₂O ratio 1/3.5, initial pH 6, reaction temp. 80°, duration 50-60 min. With increased duration the amt. of bound CH₂O rises and increases the viscosity of the product. With 40% formalin the mixts. with initial pH 6 show a rise in pH to 7 which does not change even after 1.5 hrs. The use of 40% formalin permits prepn. of resins with 120-200 sec. viscosities.

G. M. Kosolapoff

TEMKINA, K.Z.

KONDRASHKIN, Ye.P., kandidat tekhnicheskikh nauk; TEMKINA, R.Z., kandidat khimicheskikh nauk.

Plywood-stave liquid-proof barrels. Der.prom.4 no.1:10-12 Ja'55.

(MLRA 8:3)

1. TSNIIFM.
      (Barrels)

TEMKINA, R.Z., kandidat khimicheskikh nauk.

Urea resins in the manufacture of plywood. Der.prom. 4 no.12:
12-14 D '55.

(MLRA 9:3)

1. TSentral'nyy nauchno-issledovatel'skiy institut fanery i mebeli.
(Veneers and veneering) (Urea)

TEMKINA, R.Z.; MIKHAILOV,A.N.; IZRAILEVA, I.R.; YACHINA, T.V.

Adhesive carbamide resins with fillers. Der.prom. 5 no.11:9-12
N '56.

(MIRA 10:1)

1. TSentral'nyy nauchno-issledovatel'skiy institut fanery i mebeli.
(Urea) (Fillers (In paper, paint, etc.)
(Glue)

TEMKINA, R.Z., kand. khim. nauk.

Installation for the production of carbamide resin adhesives. Der.
prom. 6 no.10:15-18 O '57.   (MIRA 10:11)

1. TSentral'nyy nauchno-issledovatel'skiy institut fanery i mebeli.
                          (Urea)   (Adhesives)
            (Chemical engineering--Equipment and supplies)

TEMKINA, R.Z., starshiy nauchnyy sotrudnik; PLOTNIKOVA, G.P., starshiy
nauchnyy sotrudnik; MIRKOVICH, P.A., starshiy nauchnyy sotrudnik;
POSPELOVA, G.L., red.; SHENDARBA, L.V., tekhn. red.; KOLOMNER,
V.Z., tekhn. red.

[Fillers for adhesive urea resins and protein-base glues] Napolnite-
li dlia kleiashchikh karbamidnykh smol i belkovykh kleev. Moskva,
TSentr. biuro tekhn. informatsii bumazhnoi i derevoobrabatyvaiu-
shchei promyshl., 1958. 13 p.
                                                    (MIRA 11:10)

1. TSentral'nyy nauchno-issledovatel'skiy institut fanery i mebeli
(for Temkina, Plotnikova, Mirkovich).
                    (Glue)   (Veneers and veneering)

TEMKINA, R.Z., kand.khim.nauk

Increasing the water-resistance and durability of carbamide
resins. Der.prom. 7 no.11:7-9 N '58.   (MIRA 11:11)

1. TSentral'nyy nauchno-issledovatel'skiy institut fanery i mebeli.
                (Resins, Synthetic)

BANKO, V.P.; DEMIDOVA, L.A.; ILYUSHIN, M.A.; KONDRASHKIN, Ye.P.; kand. tekhn.nauk; MIRKOVICH, R.A.; PLATNIKOVA, G.P.; POROKHIN, A.A., kand. tekhn.nauk; RUMYANTSEVA, O.M.; TEMKINA, R.Z., kard.tekhn.nauk; TI-KHONOV, N.F.; SHVARTSMAN, G.M., kand.tekhn.nauk; SHEYDIN, I.A., kand.tekhn.nauk; SMIRNOV, A.V., red.; VOLOKHONSKAYA, L.V., red. izd-va; BACHURINA, A.M., tekhn.red.

[Veneerer's handbook] Spravochnik fanershchika. Vol.2. 1959. 333 p.
(MIRA 13:3)

1. TSentral'nyy nauchno-issledovatel'skiy institut fanery i mebeli.
(Veneers and veneering)

TEMKINA, R.Z., kand. khim. nauk

Synthetic glues for rapid gluing of wood. Der. prom. 8 no.5:12-15
My '59.
                                                                (MIRA 12:7)

1.TSentral'nyy nauchno-issledovatel'skiy institut fanery i mebeli.
                        (Glue)

TEMKINA, R.Z., kand.khimich. nauk

Producing adhesive phenolformaldehyde resins, containing practically
no freephenol, for manufacturing food containers. Trudy TSNIIFM
1:100-115 '60.   (MIRA 16:5)
                    (Gums and resins)   (Containers)

TEMKINA, R.Z., kand.khim. nauk; YACHINA, T.V., inzh.

Accelerated wood gluing with the cold method. Der. prom. 10
no. 4:5-7 Ap '61.

(MIRA 14:4)

1. Tsentral'nyy nauchno-issledovatel'skiy institut fanery i mebeli.
(Woodwork)

TEMKINA, Riva Zakharovna, kand. khim. nauk; KONDRASHKIN, Ye.P., red.;
FREGER, D.P., red. izd-va; GVIRTS, V.L., tekhn. red.

[Rapid wood gluing by a cold method using quick-hardening
carbamide resins]Uskorennoe skleivanie drevesiny kholodnym
sposobom karbamidnymi smolami bystrogo otverzhdeniia; steno-
gramma lektsii, prochitannoi v LDNTP dlia rabotnikov mebel'-
noi i derevoobrabatyvaiushchei promyshlennosti. Leningrad,
1962. 19 p.   (MIRA 15:9)
          (Gluing)   (Resins, Synthetic)

TEMKINA, R.Z., kand.tekhn.nauk

Factors influencing the carbide glue permeation in veneering. Der.-
prom. 11 no.1:11-14 Ja '62.
(MIRA 15:1)

1. TSentral'nyy nauchno-issledovatel'skiy institut fanery i meteli.
(Veneers and veneering)

TEMKINA, R.Z., kand. khim. nauk

Urea-formaldehyde resins with a minimal content of free formaldehyde. Der. prom. 12 no.8:10-12 Ag '63.

(MIRA 16:11)

1. TSentral'nyy nauchno-issledovatel'skiy institut fanery i mebeli.

USSR/Medicine - Thyroid Gland   Jan 50
                    Hormones

155T42

"Reaction of the Thyroid Gland of Guinea Pigs to
Thiouracil Under Various Temperatures," A. A.
Voytkavich, S. A. Temkina, Kazakh Med Inst Imeni
V. M. Molotov, Alma-Ata, 3 pp

"Dok Ak Nauk SSSR" Vol LXX, No 1

Experiments conducted to determine whether tem-
perature of media will vary reaction of thyroido-
hypophyseal complex of a specie to such a degree
as to make them comparable to reaction of thyroido-
in another specie. Determined that admin-

USSR/Medicine - Thyroid Gland (contd)   Jan 50

155T42

istration of thiouracil in white rats at low tem-
peratures of thiouracil in such as were obtained in
animals produced reactions and with respect to
activity of differed in species and with respect to
submitted by Acad L. A. Orbeli interrelationship.
Acad L. A. Orbeli 27 Oct 49.

155T42

TEMKINA, V. Ya.   FD-1508

USSR/Chemistry - Catalysis

Card 1/1   : Pub. 129-11/18

Author   : Kazanskiy, B. A. and Temkina, V. Ya.

Title   : Hydrogenation of diphenylfulvene in the presence of nickel

Periodical   : Vest. Mosk. un., Ser. fizikomat. i yest. nauk, 9, No 6, 91-93, Sep 54

Abstract   : The kinetic curve for the hydrogenation of diphenylfulvene over a
                skeletal nickel catalyst differs from that over a palladium catalyst.
                According to data from incomplete hydrogenation, the reaction proceeds
                just as selectively as over the palladium catalyst. Quadri-substituted
                ethylene, such as cyclopentylidenediphenylmethane, hydrogenates over
                skeletal nickel. Eight references (Six USSR)

Institution   : Chair of Organic Catalysis

Submitted   : January 25, 1954

TEMKINA, V. YA.

AUTHORS: Lastovskiy, R. P., Tenkina, V. Ya.   SOV64-58-4-7/20

TITLE: On the Stabilization of Aliphatic Iodine- and Bromine
             Derivatives of Hydrocarbons (O stabilizatsii alifaticheskikh
             iod- i bromproizvodnykh uglevodorodov)

PERIODICAL: Khimicheskaya promyshlennost', 1958, Nr 4, pp. 219 - 221
             (USSR)

ABSTRACT: Ye. I. Mironova took part in the experimental works. The
             stabilization of methylene iodide, methyl iodide, butyl
             iodide, bromoform, tetrabromomethane and methylene bromide
             was investigated in the case of a longer storing in sealed
             ampoules of colorless glass. The iodine derivatives proved
             to be less stable than the bromine derivatives; this was
             found after about 30 substances had been used in the
             experiments in the light and in the dark. It was found that
             methylene iodide, methyl iodide and butyl iodide are
             stabilized with metallic copper and zinc, resorcinol,
             hydroquinone, and diphenylamine. On this occasion it was
             found that the effect of light is of different kind.
             Bromoform, methylene bromide, and tetrabromomethane can be
             stabilized with copper, the first mentioned also with trilon B

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On the Stabilization of Aliphatic Iodine- and Bromine   3OV/64-58-4-7/20
Derivatives of Hydrocarbons

and by means of blowing through with nitrogen. The
experimental results obtained are given in a table with
the method of stabilization and the technique of
preparation   . There are 5 tables and 9
references, 2 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh
reaktivov (All-Union Scientific Research Institute for
Chemical Reagents)

1. Iodine derivatives--Stabilization   2. Bromine derivatives
--Stabilization   3. Hydrocarbons

Card 2/2

TEMKINA, V. Ya., Cand Chem Sci - (diss) "Synthesis and study of certain new complex ions," Moscow, 1960, 10 pp, (Institute of Geochemistry imeni and Analytical Chemistry imeni V. I. Vernadskiy, Academy of Sciences, USSR)

(KL, 39-60, 114)

TEMKINA, V.Ya.; LASTOVSKIY, R.P.; BRUDZ', V.G.

Hexamethylenediamine acetate. Metod.poluch.khim.reak.i prepar.
no.4/5:32-33 '62.   (MIRA 17:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh
reaktivov i osobo chistykh khimicheskikh veshchestv.

LASTOVSKIY, R.P.; TEMKINA, V.Ya.; SELIVERSTOVA, I.A.

Bisthiosalicylidene-ethylenediamine. Met. poluch. khim.
reak. i prepar. no.6:44-46 '62.   (MIRA 17:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh
reaktivov i osobo chistykh khimicheskikh veshchestv.

LASTOVSKIY, R.P.; TEMKINA, V.Ya.; FADEYEVA, I.P.

Iminodiacetic acid. Met. poluch. khim. reak. i prepar.
no.6:59-60 '62.   (MIRA 17:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh
reaktivov i osobo chistykh khimicheskikh veshchestv.

LASTOVSKIY, R.P.; TEMKINA, V.Ya.; SAMYLOVA, I.M.

o-Hydroxyphenyliminodiacetic acid   Met. poluch. khim.
reak. i prepar. no.6:67-68 '62.

p-Hydroxyphenyliminodiacetic acid.   Ibid.:68-70
(MIRA 17:5)

1. Vsesoyuznyy na chno-issledovatel'skiy institut khimicheskikh
reaktivov i osobo chistykh khimicheskikh veshchestv.

LASTOVSKIY, R.P.; TEMKINA, V.Ya.; MIRONOVA, Ye.I.

3-Hydroxy-4-carboxyphenyliminodiacetic acid. Mat. poluch. khim. reak. i prepar. no.6:70-71 '62. (MIRA 17:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov i osobo chistykh khimicheskikh veshchestv.

LASTOVSKIY, R.P.; TEMKINA, V.Ya.; SELIVERSTOVA, I.A.; YEGORUSHKINA, N.A.

    Disodium salt of magnesium ethylenediaminetetraacetate.
Met. poluch. khim. reak. i prepar. no.6:83-84 '62.

    Disodium salt of zinc ethylenediaminetetraacetate.
Ibid.:84-85   (MIRA 17:5)

    1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh
reaktivov i osobo chistykh khimicheskikh veshchestv.

LASTOVSKIY, R.P. (Moscow, Bogorodskiy val.d.3); DYATLOVA, N.M. (Moscow,
Bogorodskiy val.d.3); KOLPAKOVA, I.D. (Moscow, Bogorodskiy
val.d.3); TEMKINA, V.Ya. (Moscow, Bogorodskiy val.d.3); LAVROVA,
O.Yu. (Moscow, Bogorodskiy val.d.3)

New complexones and possibilities of their application in
analytical chemistry. Acta chimica Hung 32 no.2:229-233
'62.

1. Vsesoyuznyy nauchno-issledovatelskiy institut khimicheskikh
reaktivov.

LASTOVSKIY, R.P.; TEMKINA, V.Ya.; SELIVERSTOVA, I.A.

Using the automatic titrimeter for synthesis control. Prom. khim.
reak. i osobo chist. veshch. no.1:45-47 '63.   (MIRA 17:2)

LASTOVSKIY, R.P.; DYATLOVA, N.M.; TEMKINA, V.Ya.; YAROSHENKO, G.F.;
        KOLESNIK, Ye.S.

New polycomplexons. Trudy IREA no.25:57-65 '63.

                                        (MIRA 18:6)

LASTOVSKIY, R.P.; TEMKINA, V.Ya.; SELIVERSTOVA, I.A.

Synthesis and study of lead ethylenediaminetetraacetate. Trudy
IREA no.25:100-103 '63.   (MIRA 18:6)

LASTOVSKIY, R.P.; TEMKINA, V.Ya.; YAROSHENKO, G.F.

    N-salicyloylphenylhydroxylamine. Metod.poluch.khim.reak. i prepar.
    no.7:17-19 '63.   (MIRA 17:4)

    1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh
    reaktivov i osobo chistykh khimicheskikh veshchestv.

LASTOVSKIY, R.P.; TEMKINA, V.Ya.; FADEYEVA, I.P.

Dihydroxyethylaminoacetic acid. Metod.poluch.khim.reak. i prepar.
no.7:19-21 '63.   (MIRA 17:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh
reaktivov i osobo chistykh khimicheskikh veshchestv.

LASTOVSKIY, R.P., doktor khimich.nauk; KOLPAKOVA, I.D., kand.khimich, nauk;
DYATOLOVA, N.M., kand.khimich.nauk; TEMKINA, V.Ya., kand.khimich.
nauk

Use of complexons in analytical chemistry. Zhur.VKHO 9 no. 2:
138-145 '64.

SKVORTSOVA, I.P., red.; TEYERMAN, T., tekhn.red.; TEMKINA, Ye.L.

[Mechanized soil packing in construction work; collection of
reports] Mekhanizirovannoe uplotnenie gruntov v stroitel'stve;
sbornik dokladov. Moskva, Gos. izd-vo lit-ry po stroit., arkhit.
i stroit. materialam, 1958. 85 p.   (MIRA 12:2)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut orga-
nizatsii, mekhanizatsii i tekhnicheskoi pomoshchi stroitel'stvu.
                        (Soil stabilization)

KARASEV, K.I., kand. khim.nauk; MAKOTINSKIY, M.P., kand. arkh.;
TROSHICHEV, V.M.; Prinimali uchastiye: LUTSIK, L.D.,
inzh.; FEDOROVA, G.M., tekhnik; LIVSHITS, A.M., inzh.;
ANDREYEV, V.S., retsenzent; MIRENSKIY, B.R., inzh.,
retsenzent; GURVICH, E.A., red.izd-va; TEMKINA, Ye.L.,
tekhn. red.

[Catalog of finishing materials and products] Katalog ot-
delochnykh materialov i izdelii. Moskva, Gosstroiizdat.
Pt.2. [Paints and lacquers] Kraski i laki.   1961.   76 p.
(MIRA 16:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut novykh
stroitel'nykh materialov. 2. Chlen-korrespondent Akademii
stroitel'stva i arkhitektury SSSR (for Andreyev).
(Paint materials—Catalogs)

TEMINSKOVA-TOPALOVA, D.

Flora of Euglenophyta and Volvocineae in Bulgaria. Godishnik
biol 56 no.1:57-66 '61-'62 [publ. '63].

TEMKO, K.B.

Curved capacity and Fourier series. Uch.zap.Mosk.un. no.186[a]:
83-108 '59.   (MIRA 13:6)
                    (Fourier's series)

TEMKO, K.B.

Riess's arithmetic mean value in the theory of trigonometric
series. Uch.zap.Mosk.un. no.186[a]:109-130 '59.
                                        (MIRA 13:6)
        (Fourier's series)

9.4310

AUTHORS: Iglitsyn, M. I., Kontsevoy, Yu. A., Temko, K. P

TITLE: Calculation of Transient Processes in an n-p Junction
            at Arbitrary Injection Levels

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol 5, Nr 3, pp 508-
            513 (USSR)

ABSTRACT: This work was submitted to the III All-Union Conference
            on Semiconductor Theory in L'vov, in April 1959. Refer-
            ence is made to previous investigations by different
            scientists of transient processes in the n-p junction.
            Figure 1 illustrates the operating conditions. As
            shown in Fig. 1, the voltage remains constant during
            time T until the concentration of the excess carriers
            drops to zero, then goes through zero and approaches
            the voltage of the source. The duration T of the
            transient process can be related to the lifetime of
Card 1/12   the charge carriers in the base zone. This paper is

Calculation of Transient Processes in an n-p   77906
Junction at Arbitrary Injection Levels   SOV/109-5-3-20/26

an attempt to study the transient process, taking into
consideration the variation of lifetime at differing
injection levels. A particular case $I_{dir} = I_{rev} = I$
is analyzed. The solution of this problem shows how the
duration T of the transient process depends on the
injection level, i.e., the direct current, under the
assumption of a constant ratio of direct to reverse
current. The relation of the transient process
duration and lifetime of minority carriers in the base
zone will be investigated also. The duration of transient
process, T, depends on injection level. 1. Formulation
of the Problem. The calculation is made for a plane
p-n function with thick base and high electron mobility
under the following assumptions: a. The concentration
of recombination centers is low, and lifetime under
steady conditions changes with injection level accord-
ing to Shockley-Read.

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Calculation of Transient Processes in an n-p
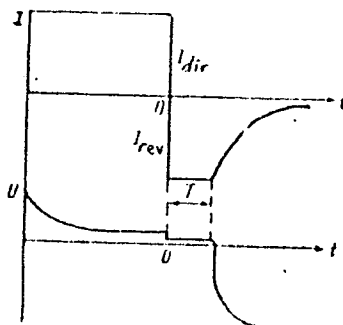Junction at Arbitrary Injection Levels

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Fig. 1. The transient process in the n-p junction with
regard to current and voltage.

Calculation of Transient Processes in an n-p
Junction at Arbitrary Injection Levels

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$$\tau = \tau_0 \frac{1 + \frac{\tau_\infty}{\tau_0} \frac{\delta p}{n_0}}{1 + \frac{\delta p}{n_0}}.$$ (2)

Here, τ_0 and τ_∞ are the lifetimes of charge carriers at small and infinitely great injection levels, respectively; $\delta p/n_0 = \Delta$ is injection level, i.e., the ratio of excess charge carrier concentration to the equilibrium charge. b. The specific electric mobility of the p-zone is considerably higher than that of the n-zone. c. An injection level range with an injection coefficient $\gamma = J_p(0)/J(0)$ approximately equal to unity, is considered. d. When holes are injected into the base area electron neutrality is maintained; i.e., $\delta n \approx \delta p$ and dn/dt $\approx$ dp/dt. e. The problem is solved in a one-dimensional approximation for an infinite conductor (W $\gg$ 3L). In a general case the p-n junction can be described by a system of equations:

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Calculation of Transient Processes in an n-p
Junction at Arbitrary Injection Levels

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$$\frac{\partial n}{\partial t} = -c_n n p_t + c_n n_1 n_t + \frac{1}{q} \operatorname{div} j_n,$$ (3)

$$\frac{\partial p}{\partial t} = -c_p p n_t + c_p p_1 p_t - \frac{1}{q} \operatorname{div} j_p,$$ (4)

$$j_n = q D_n \frac{\partial n}{\partial x} + q \mu_n n E,$$ (5)

$$j_p = -q D_p \frac{\partial p}{\partial x} + q \mu_p p E,$$ (6)

$$j = j_p + j_n.$$ (7)

Here n and p are nonequilibrium concentrations of electrons and holes, respectively; n_t and p_t are electron and hole concentrations at local centers; c_n, c_p designate probability of their being captured by the local centers; n_1, p_1 are concentrations in the corresponding energy zone when the Fermi-level coincides with the level of the local center; D_n, D_p represent coefficient of electron and hole diffusion, respectively;

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Calculation of Transient Processes in an n-p   77966
Junction at Arbitrary Injection Levels   SOV/109-5-3-20/26

J_n, J_p are electron and hole component of the density
of full current J; μ_n, μ_p are electron and hole
mobility; q is electron charge; E is electric field
potential. Equations (3) to (7) clearly show the
kinetics of recombination and thermal generation of
charge carriers. This system of equations reduces to
one equation in dimensionless variables:

$$\frac{\partial y}{\partial \theta} = \frac{1 + 2\Delta y}{1 + 1.5\Delta y}\frac{\partial^2 y}{\partial X^2} - \frac{jL_0}{2qn_0 D_p(1 + 1.5\Delta y)^2}\frac{\partial y}{\partial X} +$$

$$+ \frac{\Delta}{2(1 + 1.5\Delta y)^3}\left(\frac{\partial y}{\partial X}\right)^2 - \frac{\dot{y}(1 + \Delta y)}{1 - \frac{\tau_\infty}{\tau_0}\frac{p_0}{n_0} + \frac{\tau_n \Delta y}{\tau_0}} \qquad (13)$$

where the following designations are used:

$$y = \frac{p(x)}{p(0)} - \frac{p_0}{\Delta n_0}, \quad \Delta = \frac{p(0)}{n_0}, \quad \theta = \frac{t}{\tau_0}, \quad X = \frac{x}{L_D},$$

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Here p(0) is the nonequilibrium hole concentration at
the boundary of the p-n junction (x = 0) at steady
state; $L_D = \sqrt{D_p \tau_0}$, diffusion length at low injec-
tion levels. The limiting conditions of this problem
are written as:

$$\frac{\partial y}{\partial x}\Big|_{x=0} = \frac{jL_0}{qD_p \Delta u_0} \frac{1+\Delta u}{1+2\Delta u},$$

$$y\big|_{x=0} = 0. \tag{14}$$

The relation between direct current density and injec-
tion level can be written as:

$$\frac{2(\Delta+1)\Delta}{(1+\Delta)z(\Delta)}\sqrt{1+\frac{z^2}{\tau_0}\left(\Delta-\frac{p_0^2}{n_0}\right)} = \frac{jL}{qn_0D_p}, \tag{15}$$

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$$z(\Delta) = \frac{1.42}{3\Delta+2}\sqrt{\frac{6\Delta^3-16\Delta^2+11\Delta+3}{1+\Delta}}.$$

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The solution of the corresponding stationary equation is the initial condition of the problem. 2. Calculation of Distribution of Excess Carrier Concentration During Transient Process. Calculation was accomplished by a numerical method with a computer. At first, the stationary problem $J = J_{dir}$ was solved. Two values for τ_{∞}/τ_{0} (0.1 and 10) were prescribed as well as different Δ values. The results are shown graphically in Fig. 2. Along the abscissa the distance from p-n junction

$X = \frac{x}{LD}$ is plotted, while along the ordinate axis the concentration of excess charge carriers y is shown, both in dimensionless units. The curves of Fig. 2a are drawn at time intervals $\theta = t/\tau_{0} = 0.04$, while those of

Fig. 2b are at $\theta = 0.08$. The duration of transient process T is determined by a decrease to zero of excess concentration at the p-n junction boundary with the base area; i.e., when X = 0. This dependence for τ_{∞}/τ_{0}

Card 8/12   = 0.1 and 10 respectively, and various Δ values are

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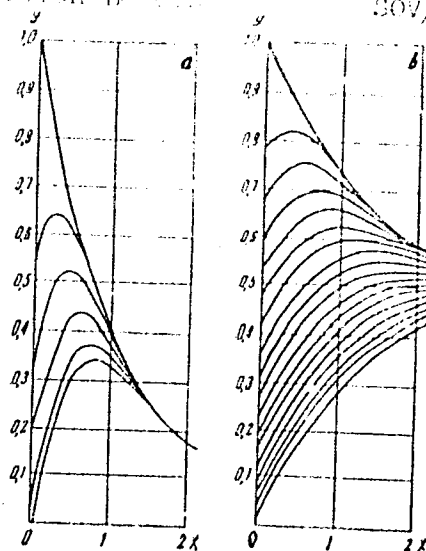
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Fig. 2. Changes in the distribution of excess concentra-
tion in the base area of electron-hole junction, during
transient process: (a) $\tau_\infty/\tau_0 = 0.1$; $\Delta = 0.5$; (b)
$\tau_\infty/\tau_0 = 10$; $\Delta = 1$.

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shown in Fig. 3. The influence of τ_∞ / τ_0 ratio on
the duration of the transient process is very considerable,
as shown in Fig. 4. An analysis of the above numerical
calculations results in an approximate expression:

$$T(\Delta) = K\tau(\Delta). \qquad\qquad (16)$$

permitting an experimental determination of lifetime vs
injection level according to transient characteristics
of p-n junction with a thick base. A. I. Sidorov helped.
There are 4 figures; 7 references, 3 Soviet, 4 U.S. The
U.S. references are: C. A. Bittmann, G. Bemski, J. Appl.
Phys., 28, 12, 1423 (1957); S. Lax, S. Neustadter, J.
Appl. Phys., 25, 9, 1148 (1954); M. Byczkowski, J. R.
Madigan, J. Appl. Phys., 28, 1, 8 (1957); R. H. Rediker,
D. E. Sawyer, Proc. IRE, 45, 7, 944 (1957).

SUBMITTED: June 29, 1959

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Calculation of Transient Processes in an n-p
Junction at Arbitrary Injection Levels
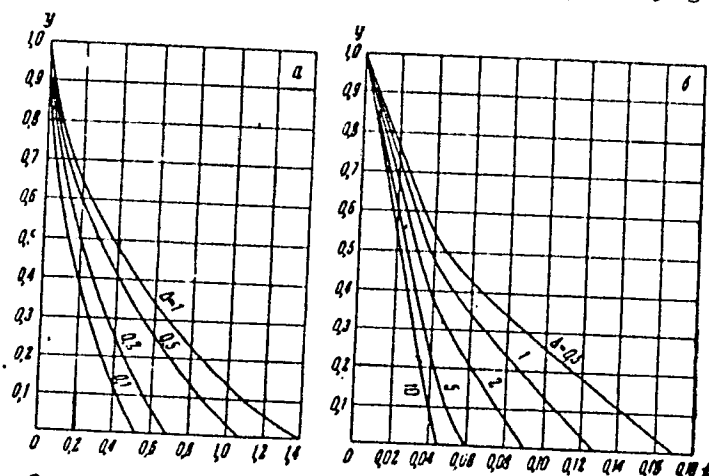
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Fig. 3. Excess concentration at p-n junction boundary
(X = 0) vs time during transient process ($\triangle$ is injec-
tion level at p-n junction boundary during transit time
of direct current); (a) $\tau_\infty / \tau_0 = 10$; (b) $\tau_\infty / \tau_0 =$
0.1.

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Calculation of Transient Processes in an n-p   77966
Junction at Arbitrary Injection Levels   SOV/109-5-3-20/26
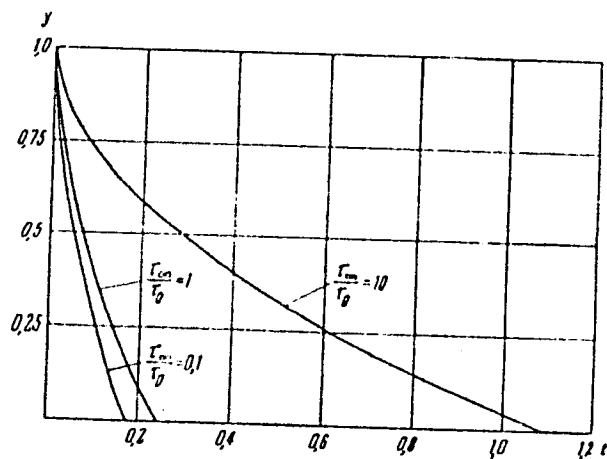
Fig. 4. Dependence of excess concentration at p-n junc-
tion boundary (X = 0) on time at Δ = 0.5 and various
Card 12/12 τ_{∞}/τ_{0}.

TEMKO, K. V.

TEMKO. K. V.: "On the agreement between Fourier series and functions with an integrable square". Moscow, 1955. Min Education. Moscow Oblast Pedagogical Inst. (Dissertations for the degree of Candidate of Physicomathematical Sciences.)

SO: Knizhnaya Letopis' No. 50. 10 December 1955. Moscow.

TEMKO, K.V.

Convex capacity of sets and the Fourier's series. Dokl. AN SSSR
110 no.6:943-944 O '56.

(MLRA 10:2)

1. Moskovskiy oblastnoy pedagogicheskiy institut. Predstavleno
akademikom P.S. Aleksandrovym.
        (Aggregates) (Fourier's series)

TEMKO, K.V.

SUBJECT	USSR/MATHEMATICS/Fourier series
AUTHOR	TEMKO K.V.
TITLE	The convex capacity and Fourier series.
PERIODICAL	Doklady Akad. Nauk 110, 943-944 (1956) reviewed 3/1957

CARD 1/2   PG - 650

Let $L = \{B\}$ be the system of all Borel sets of the interval $[0,2\pi]$. The author considers the measures μ being defined on L, i.e. completely additive, non-negative and normalized functions of the set. Normalized means that $\mu([0,2\pi]) = 1$. Let the Borel set B have a positive convex capacity which is generated by the sequence $\{\lambda_n\}$ if there exists a measure $\mu \prec B$ such that the integral

$$\int_B Q(r,x-y,\lambda)\,d\mu(y)$$

for $r \to 1-0$ is uniformly bounded in x. The notation $\mu \prec B$ denotes that $\mu(B)=1$. Here

$$Q(r,x,\lambda) = \frac{\lambda_0}{2} + \sum_{n=1}^{\infty} r^n \lambda_n \cos nx$$

and $\{\lambda_n\}$ is a convex sequence of positive numbers, where $\lambda_n \downarrow 0$ and $\sum \lambda_n = \infty$. The following theorems are formulated:

Doklady Akad.Nauk <u>110,</u> 943-944 (1956)   CARD 2/2   PG - 6ᵣ⌣

1. In order that the convex capacity of the Borel set B is positive it is necessary and sufficient that there exists a measure $\mu \prec B$ such that the series $\sum (\alpha_n \cos nx + \beta_n \sin nx) \lambda_n$ is the Fourier series of a bounded function. Here α_n and β_n are the Fourier-Stiltje's coefficients of the measure μ.

2. If the Borel set B_o possesses a positive Lebesgue measure, then it possesses a positive convex capacity too, which is generated by an arbitrary sequence $\{\lambda_n\}$ of the described kind.

3. If $\{\lambda_n\}$ is of the described kind and if $n \Delta \lambda_n$ is not increasing, then from the convergence of the series

$$\sum (a_n^2 + b_n^2)\, \frac{1}{\Delta \lambda_n}$$

there follows that the trigonometric series $\sum (a_n \cos nx + b_n \sin nx)$ and its conjugate series can diverge at most on a set with vanishing convex capacity (which is generated by $\{\lambda_n\}$).

INSTITUTION: The Educational Institute of the Domain Moscow.

ΤΕΜΚΟ, Κ.Ν.

AUTHOR: ADIROVICH,E.I., TEAKO,K.V.   57-6-4/36
TITLE: Transition, Frequency and Phase Characteristics of a Transistor
              in the Case of a Common Emittor. (Perekhodnaya, chastotnaya i
              fazovaya kharakteristiki tranzistora pri obshchem emittere,
              Russian)
PERIODICAL: Zhurnal Tekhn.Fiz. 1957, Vol 27, Nr 6, pp 1174-1181 (U.S.S.R.)

ABSTRACT: The formula given by the authors in Zhurnal Tekhn.Fiz, 1957,
              Vol 27, Nr 3, pp 473-473 for the transition characteristic
              of a transistor in the case of a common emittor can not be used
              for immediate calculation of processes in transistors because
              of its complex character. Here a formula is deduced which offers
              an approximation for the transition characteristic of a transistor
              in the case of a common emittor in its total course which can
              serve as a basis for a calculation of transition processes and
              frequency characteristics.
              Also the corresponding formulae for the frequency- ane-charac-
              teristic of a transistor are deduced and then the approximation
              formulae for the frequency as well as for the phase character-
              istic are given.
              A comparison is drawn with the detailed formulae and the authors

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Transition, Frequency and Phase Characteristics of a Transistor   57-6-4/36
in the Case of a Common Emittor.

show that the approximated formulae are very exact.
In the end the relation between the critical frequency and the
transistor parameters is mentioned. (With 5 Illustrations and
3 Slavic References).

ASSOCIATION:
PRESENTED BY: Not given
SUBMITTED:
AVAILABLE: 30.12.1956
                    Library of Congress
Card 2/2

AUTHOR: TEMKO, K.V. (Moscow)   39-3-8/8

TITLE: On Absolute Convergence of Trigonometric Series (Ob absolyut-
             noy skhodimosti trigonometricheskikh ryadov)

PERIODICAL: Matematicheskiy Sbornik, 1957, Vol.43, Nr 3, pp.401-408 (USSR)

ABSTRACT: Let the convex sequence of positive numbers $\{\lambda_n\}$ satisfy
             the conditions $\lambda_n \downarrow 0$ and $\sum_n \lambda_n = \infty$.
             Let

$$Q(x,r) = \frac{\lambda_0}{2} + \sum r^n \lambda_n \cos n x .$$

The author says that the set B possesses a positive convex

capacity which is generated by $\{\lambda_n\}$, if there exists a

measure μ concentrated on B so that $\int_B Q(x-y,r) d\mu(y)$

is bounded uniformly in x for $r \to 1 - 0$.
At first the author presents two theorems on the convex capa-
city. The first theorem is an analogue of the Zygmund-Salem
theorem [Ref. 2] concerning the logarithmic capacity and the
second theorem is a generalization of Frostman's theorem
[Ref. 3].

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On Absolute Convergence of Trigonometric Series   39-3-8/8

Then it is stated:

Theorem : If the set B possesses a positive convex capacity generated by $\{\lambda_n\}$, then there exists a measure μ concentrated on B so that $\sum (\alpha_n^2 + \beta_n^2)\lambda_n < +\infty$, where α_n , β_n are the Fourier-Stieltjes coefficients of the measure μ .

Theorem: Let

$$\rho_n = 0\left(\frac{\lambda_n}{\lambda_1+\lambda_2+..+\lambda_n}\right), \quad \sum \rho_n = \infty$$

Then the relation

$$\lim_{n\to\infty} \frac{\sum_{k=1}^{n} \rho_k |\cos(n x + x n)|}{\sum_{k=1}^{n}\rho_k} = \frac{2}{\pi}$$

holds everywhere, at most except a set of vanishing convex capacity generated by $\{\lambda_n\}$. 1 Soviet and 4 foreign references are quoted.

SUBMITTED: 12 July 1956
AVAILABLE: Library of Congress

Card 2/2   1. Trigonometry

USCOMM-DC-54780

Temko, K.V.

AUTHORS: Adirovich, E. I., Ryabinkin, Yu. S., Temko, K. V.   57-1-9/30

TITLE: The Equilibrium Distribution of Field Potential and of the Con-
centration of the Charge Carriers on Fused-In Junctions (Ravno-
vesnoye raspredeleniye potentsiala, polya i kontsentratsiy no-
siteley zaryada na vplavlennykh perekhodakh).

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958, Vol. 28, Nr 1, pp. 55-66
(USSR)

ABSTRACT: First the authors show that the problem of the thermodynamic
equilibrium distribution of the potential, of the field and of
the concentration of mavable charge carriers in a general case
can not be solved according to the method of W. Shockley (ref.1)
i.e. by means of neglecting the concentration of electrons and
holes within the range of transition in comparison to the con-
centration of the dominating admixtures. Then the mathematic
formulation and the general solution of the problem are given.
The problem of the distribution of the potential, of the field
and of the concentration of charge carriers in a semiconductor
with one p-n or p-i- transition at thermodynamic equilibrium
leads to the finding of a solution for the equation of Shockley

$$\frac{d^2\Psi}{dx^2} = 2\,sh\Psi - \Pi(x)$$ for the potential (1) under corresponding

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The Equilibrium Distribution of Field Potential and of the Con-   57-1-9/30
centration of the Charge Carriers on Fused-In Junctions.

boundary conditions. For the case where the outer contacts are
sufficiently far away from the p-n transition the solution of the
equation (1) must be found on the whole infinite straight
$(-\infty < x < \infty)$. By means of a double integration the solution of
the problem is given in form of a inversion function (equations
(16) and (17) and such the solution of the problem is led back
for the completely general case to a quadrature. This result is
also valid if the concentration of the recombination centers
(traps) in the semiconductor are great and the volume charge
connected with these centers is contained in the Poisson equation.
The equation (18) is put down for this case. In the next chapter
the p-i transition is investigated and the authors show that the
potential distribution in the semiconductor of the i-type can be
expressed in elementary functions. In a p-semiconductor an im-
mediate integration can not be carried out and the authors show
that within this range the potential $\Psi(x)$ can be approximated
with a sufficient degree of exactness by an exponential magnitude
independent from the alloy-degree of the semiconductor. In the
third chapter the p-n transition is investigated. The general
solution for a p-n transition is expressed by the obtained equa-
tions(16) and (17). The authors show that an exponential approxi-
Card 2/3   mation in the semiconductor of the p-type remains in all cases

The Equilibrium Distribution of Field Potential and of the Con-   57-1-9/30
centration of the Charge Carriers on Fused -In Junctions.

where the degree of alloy of the p-range exceeds that of the n-range by more than one order of magnitude, i.e. practically in almost all real cases. For real conditions the semiconductor of the n-type is divided into three ranges and approximation formulae are given for them. Diagrams are enclosed for the determination of the position of p-n transitions in dependence on the concentration of admixtures in semiconductors of the n- and p-type. The more exact solution of the equation (1) and the calculation of the position of p-n transitions was carried out by means of an electronic computing machine of the "Strela-3" type. There are 9 figures, 4 tables, and 4 references, 2 of which are Slavic.

SUBMITTED: June 12, 1957

AVAILABLE: Library of Congress

Card 3/3

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16.4200

AUTHOR: Temko, K.V.

TITLE: The arithmetic means of Riesz in the theory of trigonometric
            series

PERIODICAL: Referativnyy zhurnal. Matematika, no. 7, 1961, 8,
            abstract 7 B 33. ("Uch. zap. MGU", 1959, vyp 186, 109-130)

TEXT: The author considers the trigonometric series

$$\sum_{n=1}^{\infty} \left(a_n \cos nx + b_n \sin nx \right) , \tag{1}$$

where $a_n = O(n^\lambda)$, $b_n = O(n^\lambda)$. $f_r(x)$ denotes the sum of the series
which appears after an r times term by term integration of (1). Let
$r > \alpha + 1 \geqslant \lambda + 1$. It is proved : If the series (1) in one point is
(R, α)-summable with respect to S then in this point there exists the
generalized derivative (in the sense of de Vallee - Poussin) of r-th
order of $f_r(x)$ and it is equal to S . A corresponding result holds also

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The arithmetic means of Riesz   ...

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for the series conjugate with (1). Analogous theorems for Cesaro means
of integral orders were proved by A.I. Plesner.

[Abstracter's note : Complete translation.]

Card 2/2

16(1)   SOV/39-49-1-5/5
AUTHOR: Temko, K.V. (Moscow)

TITLE: On the Equilibrium Potential, Convex Capacity, and Uniqueness
             of Trigonometric Series

PERIODICAL: Matematicheskiy sbornik, 1959, Vol 49, Nr 1, pp 109-132 (USSR)

ABSTRACT: § 1. Let E be a set of finitely many intervals without common
             points; let Γ be the boundary of the unit circle, $\phi(r) = \int_{L}^{1/r} t|\lambda'(t)| dt$,

             where $\lambda(t) \in A$, i.e. $\lambda(t) > 0$ convex, two times differentiable
             and $\lambda(t) \downarrow 0$ for $t \to \infty$; $t|\lambda'(t)|$ not increasing for an increasing t

             and $\int_{0}^{\infty} \lambda(t) dt = \infty$. The function

             (9) $v(P) = \int_{\Gamma} \phi(r_{PQ}) d\mu(Q)$

             is called a v-potential.
             Theorem 1: Under the above assumptions there exists a measure μ,
             $\mu(E) = 1$, so that the v-potential generated by this measure is
             constant on E.

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On the Equilibrium Potential, Convex Capacity,   SOV/39-49-1-5/5
and Uniqueness of Trigonometric Series

§ 2. It is proved that, according to K.V.Temko $\overline{[}$Ref 2$\overline{]}$, the
definition of the capacity of a set is equivalent to the
definition of Frostman $\overline{[}$Ref 1$\overline{]}$ if this latter definition is
interpreted correspondingly.
§ 3. Let the series

(29) $\dfrac{a_0}{2} + \displaystyle\sum_{n=1}^{\infty} (a_n \cos nx + b_n \sin nx)$

belong to the class T_λ, $\lambda_n \in A$, i.e. let $\displaystyle\sum_{n=0}^{\infty} (a_n^2 + b_n^2) \cdot \lambda_n$ be

convergent. Let $B \in U(T_\lambda)$ if a series (29) which belongs to T_λ

and whose Poisson-Abel-sum is 0 outside of B, vanishes identically.

Theorem 8: In order that a closed set B belongs to $U(T_\lambda)$ it is

sufficient that the convex capacity of B generated by $\lambda(t) \in G$

equals zero; if $\lambda(t)$ belongs to D, then it is necessary too.
$\lambda(t) \in D$ means: 1. $\lambda(t) \in A$; 2. $t \lambda(t) \uparrow \infty$ for $t \to \infty$; 3. $t^2 |\lambda'(t)|$

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On the Equilibrium Potential, Convex Capacity,   SOV/39-49-1-5/5
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does not decrease for $t \to \infty$; 4. $3|\lambda(t)| - t \lambda''(t) \geqq 0$ and
decreases for $t \to \infty$. $\lambda(t) \in G$ means: $\lambda(t) > 0$, convex, $\lambda(t) \downarrow 0$
for $t \to \infty$, $\int_{0}^{\infty} \lambda(t) dt = \infty$, $\Delta^2 \lambda(0) > 0$, where

$$\Delta^2 \lambda(t) = \Delta \lambda(t) - \Delta \lambda(t+1); \quad \Delta \lambda(t) = \lambda(t) - \lambda(t+1).$$

The author thanks N.K.Bari.
There are 7 references, 3 of which are Soviet, 2 Swedish,
1 American, and 1 Polish.

SUBMITTED: December 17, 1957

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16.2800

AUTHOR: Temko, K.V. (Moscow)

TITLE: On the convex capacity

TEXT: Let $\mathscr{B} = \{B\}$ be the system of all Borel sets of the interval $[0,2\pi]$. Let μ be a continuous measure defined on $\mathscr{B}$; $\mu([0,2\pi])=1$. If $\mu(B)=1$, then μ is called concentrated on B, in signs $\mu \prec B$. Let

$$Q(x) = \sum_{n=0}^{\infty} \lambda_n \cos nx, \qquad (1)$$

where $\lambda_n = \lambda(n)$, $\lambda(t)$-- positive function for which $\lambda(t)\downarrow 0$ for $t \to \infty$, $\sum_n \lambda_n = \infty$, $\Delta^2 \lambda_n \geqslant 0$ and $\Delta^2 \lambda_0 > 0$, where $\Delta^2 \lambda_n = \Delta \lambda_n - \Delta \lambda_{n+1}$, $\Delta \lambda_n = \lambda_n - \lambda_{n+1}$. The function $u(x)$:

$$u(x) = \int_0^{2\pi} Q(x-y)\,d\mu(y) \qquad (2)$$

is called the u-potential generated by μ.

Definition 1: The number $\mathscr{C}_M[B,\lambda(t)] = e^{-V}$, where $V = \inf_{\mu \prec B} \sup_{0 \leqslant x \leqslant 2\pi} u(x)$,

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On the convex capacity

is denoted as the convex capacity of the set $B \in \mathcal{X}$ generated by a function $\lambda(t)$ of the class mentioned.

Definition 2: $\lambda(t) \in \Gamma(\lambda)$, if, besides the given conditions, it satisfies the conditions $t|\lambda'(t)|$ does not increase for $t \to \infty$. Let

$$\phi(x) = \int_0^{1/x} t|\lambda'(t)|\, dt \tag{3}$$

and

$$v(x) = \int_0^{2\infty} \phi(x-y)\, d\mu(y). \tag{4}$$

$v(x)$ is called the v-potential generated by μ. Let $\lambda(t) \in \Gamma(\lambda)$ be everywhere.

Theorem 1: The u-potential generated by an arbitrary measure μ is finite everywhere, eventually except a set of points with vanishing convex capacity.

Theorem 2: Let $v(x)$ be the v-potential generated by μ. Then to every point x there exists a point x^* belonging to the kernel of the measure μ so that

$$v(x) \leqslant 2v(x^*). \tag{8}$$

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On the convex capacity

Theorem 3: Let $B \in \mathscr{B}$ be a set with vanishing convex capacity; let μ be an arbitrary measure concentrated on B. There exists at least one point $x \in B$ in which the u-potential generated by μ is $+\infty$.

Let $\mu(x,r) = \mu([x-r, x+r])$.

Theorem 4: If

$$I(x) = \int_0^q \mu(x,t)\phi'(t)dt \qquad (9)$$

is finite in the point x (q is determined from the equation $\mu(x,q)=1$), then the u-potential generated by μ is also finite in x; $\phi(t)$ is defined by (3).

Let h(t) be that function, with the aid of which the Hausdorff h-measure is defined. If $h(t) = \dfrac{1}{\phi(t)}$, where $\phi(t)$ is given by (3), then the Hausdorff h-measure is said to have the dimension $\lambda(t)$.

Theorem 5: The convex capacity of the closed set B generated by $\lambda(t) \in \Gamma(\lambda)$ will be positive, if the Hausdorff h-measure of this set, relative to the function h(t) for which

$$\int_0^a h(t)\phi'(t)dt, \quad 0 < a < \infty \qquad (10)$$

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On the convex capacity

converges, is positive.

Theorem 6: If $B \in \mathcal{X}$ has a positive convex capacity generated by $\lambda(t)$, then B has also a positive Hausdorff h-measure with dimension $\lambda(t)$.

Theorem 7 gives another formulation of theorem 4.

Theorem 8: Let μ be an arbitrary measure and $F(x)$ the point function generated by this measure. The integral $\int_0^\pi \left[F(x+t)-F(x-t)\right]\phi'(t)dt$ can then become ∞ at most on a set with vanishing convex capacity.

Theorems 9, 10, 11 give necessary and sufficient conditions that the convex capacity of a perfect set be positive.

Let $\varphi(t)$ be the function corresponding to a set P of the Cantor type according to Nevanlinna (Ref.5: Odnoznachnyye analiticheskiye funktsii [Unique analytic functions], Moscow-Leningrad, Gostekhizdat, 1941).

Theorem 12: A set P of the Cantor type has a positive convex capacity which is generated by $\lambda(t) \in \Gamma(\lambda)$ if and only if the integral

$$\int_0^{2\pi} \varphi(t)\phi'(t)dt \qquad (18)$$

converges, where $\varphi(t)$ is the function corresponding to this set P.

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9/039/60/051/002/002/005
C111/C333

On the convex capacity

The author thanks N.K.Bari. There are 8 references: 4 Soviet-bloc and 4 non-Soviet-bloc. The two references to English-language publications read as follows: R.Salem, On the theorem of Zygmund, Duke Math.Journ., 10, No.1 (1943), 23-31; R.Salem, A.Zygmund, Capacity of sets and Fourier series, Trans.Amer.Math.Soc., 59, No.1 (1946), 23-41.

SUBMITTED: September 23, 1958

Card 5/5

TEMKO, K.V.; TEMKO, S.V.

    The equilibrium potential. Dokl. AN SSSR 166 no.3:551-554
    Ja '66.   (MIRA 19:1)

    1. Submitted May 4, 1965.

PA - 2024

AUTHOR: TEMKO, S.V.
TITLE: On the Derivation of the FOKKER-PLANCK Equation for
            a Plasma.
PERIODICAL: Zhurnal Eksperimental'noi i Teoret.Fiziki, 1956, Vol 31, Nr 6,
            pp 1021-1026 (U.S.S.R.)
            Received: 1 / 1957   Reviewed: 3 / 1957

ABSTRACT: The method developed by BOGOLJUBOV (Problemy dinamiceskoj teorii v
            stati sticeskoj fisiko (= The problems of the dynamical theory in
            statistical physics, 1946) permits the determination of the
            FOKKER-PLANCK equation on the basis of the mechanics of molecular
            totalities and the explicit computation of their coefficients for
            a prescribed law of interaction. In the case of a plasma the di-
            vergence of the FOKKER-PLANCK coefficients is liquidated in large
            intervals by cutting off in the DEBYE radius. This cutting-off
            method is on this occasion not applied from without, but it re-
            sults automatically from BOGOLJUBOV'S method. The present equation
            gives the derivation of the FOKKER-PLANCK equation for a many-type
            plasma with homogeneous spatial distribution. Furthermore, the
            asymptotic behaviors of the particles of the plasma in the case of
            low and high energies of motion are studied.

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On the Derivation of the FOKKER-PLANCK Equation   PA - 2024
for a Plasma.

The plasma is studied in the state of statistical equilibrium and
the behavior of any single particle belonging to the plasma (or
of a foreign charged particle which flew into the plasma) is in-
vestigated. When deriving the equation for the distribution func-
tion of such a particle it is assumed here that its interaction
with the plasma does not destroy the statistical equilibrium of
the plasma. The following system is investigated: The plasma en-
closed in the volume V consists of N charged particles which may
belong to $M \geqslant 2$ different kinds. The HAMILTON equation of such
a system is here explicitly given, and so are the distribution
functions of the particle system. Finally also the equation for the
distribution function of any plasma particle is given. By inserting
the solution of the equation for the correlation functions g_{ab}
into the aforementioned equation for the distribution function it
is possible to obtain the equation for the motion of the charged
particles in the plasma. For the special case of the spatially
homogeneous distribution of the plasma the distribution is here
explicitly given. Two terms describe the effect of DEBYE'S
screening by which the correlation functions are out off in large

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On the Derivation of the FOKKER-PLANCK Equation   PA - 2024
for a Plasma.

intervals. In the case of a statistical equilibrium of the plasma
the distribution functions for every particle of the plasma (with
the exception of the cut off particle, the motion of which is
assumed to be not steady) can be set up in form of a MAXWELL dis-
tribution. In conclusion the coefficients for the FOKKER-PLANCK
equation for a plasma are investigated. In the case of a steady
motion of a cut-off plasma particle a MAXWELL distribution is ob-
tained in all cases investigated here.

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Card 3/3

TEMKO, S.V.

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ABSTRACT   According to BOGOLYUBOV N.N. the solution of the equations for the density matrix (and correspondingly also for the quantum-like distribution function) can be reduced to the solution of the equations for the quantum-like function F_s with classical boundary conditions.

Here $f_s = \gamma_s F_s$ is true, where γ_s denotes the operator of the symmetrization for n particles. For systems with central interaction the equations for F_1 and F_2 are here explicitly written down. By confining oneself to pairwise correlations,

$$F_2(q_1,q_2,p_1,p_2;t) = F_1(q,p_1;t)F_1(q_2,p_2;t) + g(q_1,q_2,p_1,p_2;t)$$

can be set up and an analogous expression is obtained for F_3. In the case of weak interaction the function g is small

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